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EXAMINER
MCLEAN, NEIL R

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 June 2010</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>36,39-42,44-52 and 62-67</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>36, 39-42, 44-52 and 62-67</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Status of Claims

1.   Claims 36, 39-42, 44-52 and 62-67 are pending in this application.

Claims 36, 41, 42, 46 and 47 have been amended.

Claims 62-67 are new.

Claim 43 has been cancelled.

Response to Arguments

2.   Regarding Applicant's Argument (page 7, lines 8-13):

"In addition, even if the teachings of Hartman would lead one of ordinary skill in the art to combine the various components of Jeyachandran, the combination would not suggest the claimed invention. Claims 36 recites that the formatter controller module and the print server module use the same processor. However, the conversion functions and server functions in Jeyachandran are performed by different components that, even if combined on a single integrated circuit or single microchip, would not share the same processor."

Examiner's Response:

The Examiner respectfully disagrees with Applicants assertion that the conversion functions and server functions that even if combined on a single integrated circuit or single microchip, would not share the same processor.   This is because the

"Computer Chip 100" disclosed by Hartmann has an embedded processor 150 which
controls all of the reconfigurable logic networks; (Column 4, lines 47-49), that is to say all of
the logic networks of Hartmann are controlled by the same processor. Hartmann further
discloses that the embedded processor is preferably in the AMD E86 family; (Column 4,
lines 49-54).

3.   Regarding Applicant's Argument (page 7, lines 21-27):

        "The Office Action asserts that in Jeyachandran, the request from the client
component at step S 1101 corresponds to a print server interrupt. *See* Office Action, p.
7. However, a simple request is not a. processor interrupt, and Jeyachandran is silent
regarding a "processor is configured to interrupt the at least one print function and
perform a print server function in response to receiving the print server interrupt."
Further, Hartman is silent regarding a print server interrupt. Therefore, Applicants
request that the rejection of claims 27 be withdrawn."

        Examiner's Response:

        The combination of Jeyachandran & Hartmann do not disclose expressly a
processor that is configured to interrupt the at least one print function and perform a
print server function in response to receiving the print server interrupt.

        Nozaki discloses a processor (controller 20 residing in print server 2) that is configured to
interrupt the at least one print function (Interrupt control table 56 of Figure 3. Figure 4 shows print
interrupt condition information) and perform a print server function in response to receiving the

print server interrupt (e.g., suspend printing upon completion of printing, send error notice, create spool file, or

select from the print spool files stored temporarily based on the interrupt printing condition information as described at

[0040] and [0041]).

Jeyachandran, Hartmann & Nozaki are combinable because they are from the

same field of endeavor of image processing. At the time of the invention, it would have

been obvious to a person of ordinary skill in the art to interrupt the at least one print

function and perform a print server function in response to receiving the print server

interrupt. The suggestion/motivation for doing so is create a process wherein a client

can prioritize the way in which print requests are handled. Therefore, it would have been

obvious to combine the printer formatter of Jeyachandran & Hartmann with the interrupt

printing control function of Nozaki to obtain the invention as specified to take into

account a clients priorities when executing print jobs.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 36, and 39-42, 44-46 and 48-52 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Jeyachandran et al. (US 6,667,810) hereinafter 'Jeyachandran'

in view of Hartmann (US 6,096,091).

Regarding Claim 36:   (Currently Amended)

Jeyachandran discloses a printer formatter comprising:

a processor (Controller 602) to perform at least one print function associated with a print job (Control unit 602 handles the processes for Print Job, Send Job, Cancel Job, and Send Notification and Receive HTTP Notification; Column 30, lines 22-24);

a system input/output (I/O) (Command Analysis/Process Unit 208) associated with the processor to receive an input signal and provide an output signal (e.g., Client request is received by the Command Analysis/Process Unit 208 which outputs command or print job to the Database 104; Column 18, lines 15-18);

a formatter controller module (Conversion Control Unit 603) configured to perform at least a first formatting function associated with the print job using the processor (A format conversion is performed using an appropriate image conversion library; Column 29, lines 28-30); and

a print server module (Server 103; Note: Server 103 is within printing device; Column 19, lines 29-31) configured in communication with the processor (e.g., Client requests are transmitted to the server component 103; Column 18, lines 2-3), to manage a print queue using the processor (Server 103 communicates with the database 104 via the database manager 209 to add or to update a job, or to acquire data; Column 18, lines 32-34);

Jeyachandran discloses all of the above limitations, including wherein the processor (602), the system I/O (208), the formatter controller (603), and the print server (103) are all located within the printer (Figures 1 and 6).

However, Jeyachandran does not disclose expressly a substrate including a microchip comprising the processor, the system I/O, the formatter controller module, and the print server module.

Hartmann discloses wherein multiple devices are on a single chip (Figure 1; Computer Chip 100 comprising a plurality of reconfigurable logic networks. The chain of logic networks 110 may be of any length, either limited to a single integrated circuit 100, or passing various inputs and outputs between a plurality of integrated circuits 100. Each integrated circuit 100 may be identical or specialized in a special purpose configuration; Column 6, lines 10-14).

Hartmann & Jeyachandran are combinable because they are from the same field of endeavor of image processing; e.g., both references disclose methods of processing and controlling the transmission of data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to disclose a substrate including a microchip comprising the processor, the system I/O, the formatter controller, and the print server. The suggestion/motivation for doing so is to decrease cost and improve performance by using an integrated circuit in which all the components needed for a computer or other system are included on a single chip. Hartmann also discloses wherein instructions can be stored in memory which can be read by the processor 150 (Column 4, lines 57-67) and executed. The Examiner equates these 'instructions' to be equivalent to the Applicant's 'modules' in that they are not dedicated hardware per se but software running on a processor.

It is well known in the art that cost is low because the chips, with all their components, are printed as a unit and not constructed one transistor at a time. Furthermore, much less material is used to construct a circuit as a packaged IC die than

as a discrete circuit. The performance of ICs is high because the small size allows

short traces which in turn allows low power logic to be used at fast switching speeds.

Hartmann discloses in the Background of Invention that chip makers can place an

excess of 50 million transistors on a single integrated circuit (Column 1, lines 24-38).

Hartmann further discloses a need for a system and method that will bring broad

varieties of applications with dynamically reconfigurable logic networks for processing in

a system on a chip (SoC). Therefore, it would have been obvious to combine

Hartmann's integrated circuit on a single computer chip with Jeyachandran's printing

system to obtain the invention as specified to lower the cost per unit and increase the

speed of a printing system.

Regarding Claim 39: (Previously Presented)

        The proposed combination of Hartmann & Jeyachandran, explained in the

rejection of claim 36, renders obvious the:

        "Printer formatter of claim 38 wherein the microchip is configured to function

within the printer."

        This occurs in the operation of the proposed combination as discussed above.

Thus, the arguments similar to that presented above for claim 36 are equally applicable

to claim 39.

Regarding Claim 40:   (Previously Presented)

Jeyachandran further discloses the printer formatter of claim 36 wherein the

system I/O is configured to receive the print job (Command analysis/process unit 208 adds or

updates a print job to Database 104; Column 18, lines 15-18).

Regarding Claim 41:   (Currently Amended)

Jeyachandran further discloses the printer formatter of claim 36 wherein the

formatter controller module is configured to convert the print job from a first format to a

second format (e.g., step S2211 the format conversion library is employed to convert the job into a JPG or GIF

format.)

Regarding Claim 42:   (Currently Amended)

Jeyachandran further discloses the printer formatter of claim 36 wherein the

formatter controller module is configured to compress the print job (Figure 25; STEP S2506

'COMPRESS AND ENCODE BYTE TRAIN') or de-compress the print job (Figure 20: STEP S1802 the

UnformatData function is employed to decode and develop compressed data; Column 26, lines 64-65).

Regarding Claim 44: (Previously Presented)

Jeyachandran further discloses the printer formatter of claim 36 wherein the

system I/O is configured to generate an I/O interrupt in response to receiving the input

signal (e.g., a request "selection of a print button" is converted into a print command; Column 18, line 64 - Column

19, line 3), and the processor is configured to perform an I/O function in response to

receiving the I/O interrupt (then, "execution of a process corresponding to the print button", and printing is

performed; Column 19, lines 3-4).

Regarding Claim 45:   (Previously Presented)

Jeyachandran further discloses the printer formatter of claim 44 wherein the I/O

function includes receiving and storing the print job (Command analysis/process unit 208 adds or

updates a job to Database 104; Column 18, lines 15-18).

Regarding Claim 46:   (Previously Presented)

Jeyachandran further discloses the printer formatter of claim 44 wherein the I/O

function includes providing an indication to the print server that the print job has been

received (The Flowchart of Figure 11 shows the processing performed by the server 103 when a client issues a

request).

Regarding Claim 48:   (Previously Presented)

Jeyachandran further discloses the printer formatter of claim 36 wherein the

processor is configured to store the print job in the print queue (FIG. 23 is a flowchart showing

the PrintJob processing. STEP S2311 'SEND JOB TO PRINT QUEUE')

Regarding Claim 49:   (Previously Presented)

Jeyachandran further discloses the printer formatter of claim 36 wherein the

processor is configured to provide a print job status notification. (FIG. 5 is a diagram showing

the sequence of the processing performed to display for a user the processing results and a status change)

Regarding Claim 50:   (Previously Presented)

     Jeyachandran further **discloses** the printer formatter of claim 36 wherein the

processor is configured to provide a print job complete notification (Figure 23 is a flowchart for

print job processing; STEP S2312 'REVISE ENTRY TO "PRINTING SUCCESS" OR "PRINTING FAILURE"; THEN

STEP S2313 'SET NOTIFICATION STATUS IN ACCORDANCE WITH PRINTING STATUS'; Note: Figure 27; Send

Notification Processing; e.g., Pop-Up Window).

Regarding Claim 51:   (Previously Presented)

     Jeyachandran further **discloses** the printer formatter of claim 36 wherein the

processor is configured to provide a print error notification (Figure 23 is a flowchart for print job

processing; STEP S2312 'REVISE ENTRY TO "PRINTING SUCCESS" OR "PRINTING FAILURE"; THEN STEP

S2313 'SET NOTIFICATION STATUS IN ACCORDANCE WITH PRINTING STATUS'; Note: Figure 27; Send

Notification Processing; e.g., Pop-Up Window).

Regarding Claim 52:   (Previously Presented)

     Jeyachandran further **discloses** the printer formatter of claim 36 wherein the

processor is configured to remove the print job from the print queue in response to a

cancel signal. (FIG. 26 is a flowchart showing the CancelJob processing; Column 29, lines 39-57)

6.   Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Jeyachandran & Hartmann as applied to claims 36, 39-42, 44-46 and 48-52 above, and

further in view of Nozaki (US 2002/0181008).

Regarding Claim 47:   (Currently Amended)

The combination of Jeyachandran & Hartmann do not disclose expressly a

processor that is configured to interrupt the at least one print function and perform a

print server function in response to receiving the print server interrupt.

Nozaki discloses a processor (controller 20 residing in print server 2) that is configured to

interrupt the at least one print function (Interrupt control table 56 of Figure 3. Figure 4 shows print

interrupt condition information) and perform a print server function in response to receiving the

print server interrupt (e.g., suspend printing upon completion of printing, send error notice, create spool file, or

select from the print spool files stored temporarily based on the interrupt printing condition information as described at

[0040] and [0041]).

Jeyachandran, Hartmann & Nozaki are combinable because they are from the

same field of endeavor of image processing. At the time of the invention, it would have

been obvious to a person of ordinary skill in the art to interrupt the at least one print

function and perform a print server function in response to receiving the print server

interrupt. The suggestion/motivation for doing so is create a process wherein a client

can prioritize the way in which print requests are handled. Therefore, it would have

been obvious to combine the printer formatter of Jeyachandran & Hartmann with the

interrupt printing control function of Nozaki to obtain the invention as specified to take

into account a clients priorities when executing print jobs.

Regarding Claims 62-67:   (New)

The proposed combination of Jeyachandran, Hartmann & Nozaki, explained in

the rejection of device (printer formatter) claims 36, 39-42, and 44-52 renders obvious

the steps of the method of claims 62-67 because these steps occur in the operation of

the proposed combination as discussed above. Thus, the arguments similar to that

presented above for claims 36, 39-42, and 44-52 are equally applicable to claims 62-67.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

          A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

          Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Neil R. McLean whose telephone number is (571)270-

1679. The examiner can normally be reached on Monday through Friday 7:30AM-

4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571.272.7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Neil R. McLean/
Examiner, Art Unit 2625

/David K Moore/

Supervisory Patent Examiner, Art Unit 2625